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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 09/661,902

Group Art Unit: 1724

Inventors: Ding et al

Filed: 9/14/2000

Title: POLYIMIDE GAS SEPARATION  
MEMBRANES

Examiner: Spitzer

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

OFFICIAL AMENDMENT AFTER FINAL REJECTION

This is in response to the Office Action mailed March 27, 2002. A three-months extension of time is attached hereto in duplicate.

Certificate of Transmission

In the specification:

Please amend the specification as follows:

Page 1, first full paragraph:

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (703) 872-9310 on 9/27/02. (Date)  
Typed or printed name of person signing this certificate:

Robert J. Fallett  
Signature: Robert J. Fallett

This invention was made with government support under Contract No. DE-FC26-99FT40497 awarded by U. S. Department of Energy. The government has certain rights in the invention.

In the paragraph bridging pages 4-5:

M. Oba, et al. have reported in Journal of Polymer Science, Part A: Polymer Chemistry, Volume 34, pp 651, 1996; and in US Patent Nos. 5,753,407 and 5,756,650 that the imidization temperature of the polyamic acids can be lowered to about 150 ° C in the presence of large amount of catalysts (up to 2 equivalent per repeat unit of polyamic acid), such as *p*-hydroxybenzoic acid. The authors have not disclosed or implied that catalysts can be advantageously utilized to reduce imidization temperature of polyamic acid salts in membrane preparation. It is known in the art that polyimide polymers can be prepared from polyamic acid salt precursors, which are formed by neutralization of the free carboxylic acid group with a tertiary amine base. US Patents 4,290,929 and 5,719,253 disclose the use of polyamic acid solutions of tertiary amine. The following publications also disclose